

Date: Thursday, 7/13/2006 3:39:32 PM  
 User: Kim Johnston

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : SKID TUBE ASSEMBLY
<b>Job Number</b> : 27910A	
<b>Estimate Number</b> : 10023	
<b>P.O. Number</b> : <i>N/A</i>	<b>Part Number</b> : D205634041
<b>This Issue</b> : 7/13/2006 <b>S.O. No.</b> : <i>N/A</i>	<b>Drawing Number</b> : D2580 REV C
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : <i>N/A</i> <b>Type</b> : LANDING GEAR	<b>Drawing Revision</b> : C
<b>Previous Run</b> : 27909A	<b>Material</b> : <i>N/A</i>
<b>Written By</b> : <i>[Signature]</i>	<b>Due Date</b> : 8/15/2006 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <i>[Signature]</i>	
<b>Comment</b> : Est Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ	
Est Rev. O 06.02.28 Added paperwork EC	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D25001190	Ext'n -1' Beam Tube 4"
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**Comment:** Qty.: 1.0400 Each(s)/Unit Total : 1.0400 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2500-1-190	Skid Tube Extrusion	<i>B24669 PT 06-07-20</i>

2.0	DC	DOCUMENT CONTROL
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**Comment:** DOCUMENT CONTROL

Photocopy D205-634 bluefile &amp; type labels per PPP D205-634 CHG001

*N/A.*

3.0	D2596	205 Web
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2596	205 Web	<i>B27655 Pm 06-07-20</i>

4.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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**Comment:** LANDING GEAR RESOURCE 11- Inspect mat'l D2500-1-190 for damage *PT 06-07-20*2-Cut D2500-1-190 per Dwg D2580 if necessary Deburr ends *PT 06-07-20*3-Drill pilot holes using drill jig DT 8149 *PT 06-07-20*4-Acid etch and Alodine tube per QSI 005 4.1 *PT 06-07-20*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr		Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NGR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date & initial all entries \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: SKID TUBE ASSEMBLY

Job Number: 27910A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5-Open holes to 0.500" as per Dwg D2580 without cutting fluid

6-Countersink holes as per Dwg D2580 without cutting fluid

7-Deburr and blow out all chips from inside of tube

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 M101193

Sikaflex expire date: 06-11-01

Start Time: 8:45

Fin Time: 8:00

DP6-7-21

Pm 06-07-21 (1)

5.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

1-Bend as per program D2580.C on CNC Bender and Folio FT009

Pm 06-07-27 (1)

2-Cut tubes as per Dwg. D2580

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Deburr ends after cutting. Remove alodine from around holes

RT 06-07-31

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

BE 06-07-31

8.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3 Step B23060

BE 06-07-31

W/O:		WORK ORDER CHANGES						
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DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

D2579

Crossbolt Spacer



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty.	Part Number	Description	Batch
20	D2579	Spacers	BE 06-07-31

10.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 StepRemove alodine as required.

2-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R

Aluminum Rod

3-Weld crossbolt spacers D2579 as per Dwg. D2580 and QSI 004. For D2579 side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R

Aluminum Rod

4-Grind welds as per Dwg D2580 Grind flush ridge made from bending

5-Drill holes for wearplates using DT 8217Open holes to 19/64", adjust stopper not to hit web. Debur

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Debur holes

7-Drill pilot holes for aft cap using DT 8215Open holes to #6 Drill bit. Debur

8-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

11.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

Inspect weld and Counterbore work to Step 20

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

W/O:		WORK ORDER CHANGES						
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*a-m 06-08-18*

*(1)*

14.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-1	Wearplate	<i>B 25137</i>

15.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	<i>B 26058</i>

16.0

D25775

Wearplate, Centre



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-5	Wearplate	<i>B 24199</i>

17.0

ALS71032130

Insert



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	ALS7-1032-130	Inserts	<i>M 19393</i>

18.0

AN960JD10L

Washer



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN960JD10L	Washer	<i>M 100 233</i>

*a-m 06-08-17*

*(1)*

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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 27910A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN34A

Bolt



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN3-4A	Bolt	<u>M 18310</u>

20.0

D25941

Plug



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594-1	<del>O-RING</del> plug	<u>B 25593</u>

21.0

D25943

O-Ring



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594-3	<del>plug</del> O-rings	<u>B 24104</u>

22.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: B 26351

23.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: M 15205

24.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

Batch: M 100233

Q.M

06-08-17

(1)

W/O:		WORK ORDER CHANGES						
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DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: h Date: 06/08/07

NOTE: Date & initial all entries

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Job Number: 27910A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 m101855

Sikaflex expire date: 02-01

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 m101855

Sikaflex expire date: 02-01

a.m. 06-08-17

0

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

m101667

Batch:

FC 06 0821

26.0

QC5

INSPECT WORK TO CURRENT STEP



DC 06/08/21



(1)

Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

27.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-634-041

Location: N/A

PPP Rev: N/A

28.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

06.08.21

Job Completion



W 06/08/23

W/O:		WORK ORDER CHANGES							
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. C SHEET 1 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED  
98/09/17 DS

QTY	Part Number	Description
X	D2580-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2596	205 WEB
1	D2575	AFT CAP
1	D2576 - 3	STEP
20	D2579	CROSS BOLT SPACER
16	D2594-1	PLUG
16	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-5	WEARSHOE
44	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
46	AN3-4A	BOLT
46	AN960JD10L	WASHER

# 00.08.28  
UP 00.08.28

DEOS  
EFFECTIVE  
98/12/14  
DEO 9124  
DEO 9183

#### GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 190 INCHES \*
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (44 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 27910 A

Diagram of a circular cross-section of a pipe with four vertical stiffeners. The stiffeners are spaced 3.500 units apart. The distance from the centerline to the outer edge of the stiffeners is 1.750 units.

Diagram illustrating the grinding locations on the underside of the D2576 propeller. The diagram shows the propeller's outline with the following labeled areas:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- GRIND FLUSH
- LOCATION RIDGE ON UNDERSIDE OF D2576
- STEP

Technical drawing of a bolted joint assembly. The drawing shows a cross-section of a bolted joint. The components and dimensions are labeled as follows:

- DRILL PRIOR TO D2575 CAP INSTALLATION (2 PLACES)**: Points to the two locations where a hole must be drilled in the cap.
- AN3-4A BOLT (1)**: Points to the bolt used to secure the cap.
- AN960J/D10L WASHER (1)**: Points to the washer used between the bolt and the cap.
- D2575 CAP**: Points to the cap being installed.
- SEAL WITH SIKAFLEX-241**: Points to the sealant applied to the joint.
- 0.208**: Dimension indicating the diameter of the hole to be drilled.
- 0.40**: Dimension indicating the thickness of the cap.

D2579 SPACER

WEB (REF)

-130 (REF)

14 PLACES

AFTER PERFORM


1. CHA
2. INS
3. WEL
4. C'B

AN3-4A BOLT (1)  
AN960JD10L WASHER (1)  
(44 PLACES)

37.50  
DISTANCE TO AFT END  
OF D2596 WEB  
3 7  
1.750 1.750  
#508 (TYP.)  
(40 PLACES)  
REFER TO DETAIL A  
8.750  
17.375  
26.000  
34.188  
57.313 (REF)  
7 EQUAL SPACES  
8.188 PITCH  
38.0  
91.500  
190.0  
(D2500-1)

[illegible]

RELEASED  
98/09/17 DS

DESIGN <i>DAH</i>	DRAWN BY <i>CP</i>	 <b>DART AEROSPACE LTD</b> HANESBURY, ONTARIO, CANADA
CHECKED <i>DAH</i>	APPROVED <i>JS</i>	
DATE 98.08.26	DRAWING NO. D2580	REV. C SHEET 2 OF 2
	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24

NO. 27910A